



“A RARE CASE OF MALROTATION OF MIDGUT PRESENTING AS INTESTINAL OBSTRUCTION IN ADULT MALE IN SOUTHERN PART OF INDIA”

General Surgery

Dr. Irshad Ahmed Shaikh*	Junior Resident, Department of General Surgery, Govt. Medical College & Hospital, Miraj, Sangli, Maharashtra, India *Corresponding Author
Dr Santosh B. Dalavi	Associate professor Department of General Surgery, Govt. Medical College & Hospital, Miraj, Sangli, Maharashtra, India
Dr Vitthal Haramkar	Junior Resident, Department of General Surgery, Govt. Medical College & Hospital, Miraj, Sangli, Maharashtra, India
Dr Mohd. Azher Ansari	Junior Resident, Department of General Surgery, Govt. Medical College & Hospital, Miraj, Sangli, Maharashtra, India
Dr Ayesha Shaikh (Gadiwan)	Junior Resident Department of Medicine, Govt. Medical College & Hospital Aurangabad, Maharashtra

ABSTRACT

Intestinal malrotation is a uncommon congenital abnormality. Usually, patients with malrotation of the intestine present in the neonatal period or the first year of life while few may remain asymptomatic and present later in childhood or adulthood. We report a 32 years young male patient presented to emergency department with acute onset abdominal pain and signs of intestinal obstruction. Plain X ray erect abdomen showed step ladder pattern of multiple air fluid levels suggestive of small bowel obstruction. As patient was vitally stable contrast enhanced CT(A+P) was done and suggestive of small bowel obstruction secondary to adhesion. Patient was conservative management for 24 hours but as, ryles tube aspirate was 600 ml bilious, abdominal girth had increased by +3 cm, hence was posted immediately for exploratory laparotomy. Intraoperative findings where dilated small bowel loops on right side of abdomen, caecum in subhepatic space with ladd's bands. Omental bands attached to distal ileum with no midgut volvulus features suggestive of Midgut Malrotation. Ladd's procedure was done. Procedure and post-operative period was uneventful

KEYWORDS

Midgut Malrotation, Ladd's bands, Subhepatic caecum, Ladd's procedure

INTRODUCTION

Malrotation of midgut bowel loop is embryological error in the fetal intestinal rotation and its mesenteric fixation, it occurs due to failure of normal 270° anticlockwise rotation of midgut around the superior mesenteric vessels during the second stage of intestinal rotation. Midgut malrotation prevalence of 1 in 500 live births has been reported in the past (1) 60-85% of cases diagnosed are seen in neonatal period (2). Midgut malrotation presenting as small bowel obstruction in adults is very rare and incidence reported is 0.0001% to 0.19 (3). We report a case of a young male with acute presentation of midgut malrotation

Case Report

A 32 years male patient presented to emergency with chief complaints of pain in abdomen associated with 4 episodes of bilious vomiting, constipation and abdominal distension from last 2 days. There was no history of previous surgical intervention. Past history including personal and family was non-contributory. On General examination, patient was afebrile and hemodynamically stable with no signs of dehydration or toxemia.

On per abdominal examination, moderately distended abdomen, soft on palpation with periumbilical tenderness, no guarding or rigidity. Bowel sound present on auscultation with tympanic note on percussion. Soft stools on per rectal examination. On work up, routine blood investigations including serum electrolytes were normal.



Fig 1:- X Ray Erect Abdomen Showing Multiple Air Fluid Levels

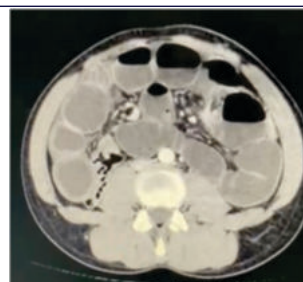


Fig 2:- Ceet (a+p) Showing Features Of Intestinal Obstruction

X ray erect abdomen showed multiple air fluid levels s/o Small bowel obstruction (FIG1). Ultrasound (A+P) revealed dilated small bowel loops of max. Diameter 3.5 cm.

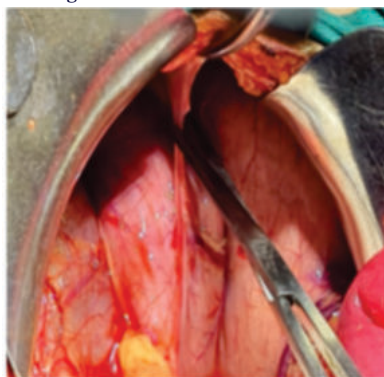
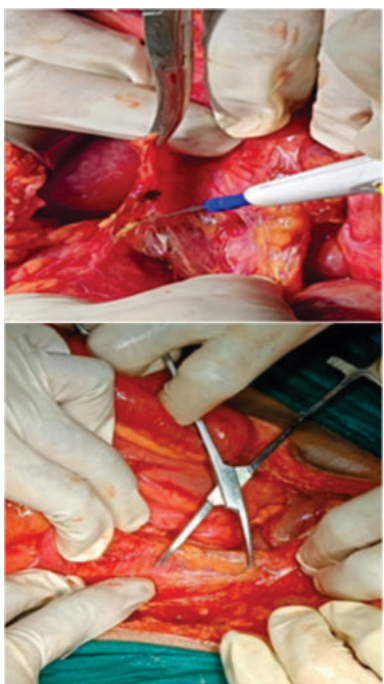
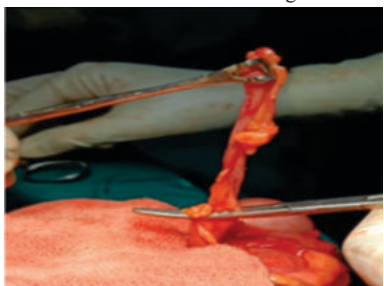
Patient was planned for conservative management for 24 hrs, meanwhile Contrast enhanced CT (A+P) was done s/o small bowel obstruction secondary to adhesions (FIG 2).

After 24 hrs. Of conservative management, Ryles tube aspirate was 600 ml bilious, abdominal girth had increased by +3 cm, patient was immediately posted for exploratory laparotomy.

Intraoperative findings were surprising, we found dilated small bowel loops on right side of abdomen, caecum in subhepatic space with ladd's bands. Omental bands attached to distal ileum with no midgut volvulus (FIG 3,4). Ladd's procedure was done which included: (FIG 5,6) –

1. Division of Ladd's bands overlying the duodenum;
2. Widening of the narrowed root of the mesentery by mobilizing the duodenum and division of the adhesions around the SMV and division of omental band.
3. Appendicectomy to prevent future diagnostic misunderstanding.
4. Keep large bowel on right side and caecum and small bowel on left side of abdominal cavity.

Patient had good post-operative recovery, was mobilised on pod 2, orals started on pod 3, abdominal drains removed on pod 5 and patient was discharged on pod 8.

Intraoperative Images**Fig 3:** Ladds Band**Fig 4 :-** Omental Band**Fig 5:-** Removal Of Ladds Band And Widening Of Mesentery**Fig 6** Appendectomy**DISCUSSION**

Midgut malrotation is due to divergence from the normal 270-degree counter clockwise rotation of the mid gut during embryonic development. During week 4 of fetal development, the embryonic gut is divided into the foregut, midgut and hindgut with specific blood supply vessels. The midgut is supplied by the superior mesenteric vessels (SMV). There are three stages of normal rotation of gut in first stage, there is physiological herniation into the umbilical cord at around sixth week of life. Around 10-12 weeks of gestation the midgut undergoes a 270-degree anticlockwise rotation around the SMA axis which is second stage and Mesenteric fixation occurs in third stage

Most anomalies of midgut rotation occur during the second stage of rotation and which includes malrotation, nonrotation, reverse rotation.

Two distinct forms of adult presentations have been reported in the

Literature: acute and chronic (4) in which chronic presentation is more common in adults.

Different modalities of investigations are available for diagnosis of midgut volvulus like plain abdominal radiograph, ultrasound scan (USG), computed tomography (CT) scan, rarely mesenteric arteriography and magnetic resonance imaging (MRI). But CT scan with contrast study is now considered the investigation of choice; providing diagnostic accuracy of 80% (5) Surgery is the mainstay of treatment for midgut malrotation. The surgical management of intestinal malrotation was first described by William Ladd in 1936(6) the classical Ladd's Procedure consists of 4 parts:

- division of Ladd's bands overlying the duodenum;
- widening of the narrowed root of the mesentery by mobilizing the duodenum and division of the adhesions around the SMA;
- counter clockwise derotation of the midgut volvulus if present
- appendectomy to future diagnostic misunderstanding
- keeping large bowel on right and small bowel with caecum in left of abdominal cavity.

CONCLUSION

Small bowel obstruction due to midgut malrotation is missed due to its low likelihood in adult population

This article emphasizes the importance of considering late presentation of midgut malrotation as a differential diagnosis for adult population presenting with small bowel obstruction particularly in patients with no abdominal operative history Most of time it is on table intraoperative diagnosis

Ladd's procedure is standard operation for midgut malrotation which can be done by open or laparoscopic methods.

REFERENCES

1. Torres AM, Zeigler MM. Malrotation of the intestine. World J Surg. 1993; 17:326-31.
2. Aboagye J, Goldstein SD, Salazar JH, Papandria D, Okoye MT, Al-Omar K, et al. Age at presentation of common pediatric surgical conditions: Re-examining dogma. J Pediatr Surg. 2014; 49:995-9.
3. Von Flue M, Herzog u, Ackermann C, Tondelli P, Harder F. Acute and chronic presentation of intestinal nonrotation in adults. Dis Colon Rectum. 1994; 37:192-8.
4. Dietz DW, Walsh RM, Grundfest-Broniatowski S, Lavery IC, Fazio VW, Vogt DP. Intestinal malrotation: a rare but important cause of bowel obstruction in adults. Dis Colon Rectum. 2002; 45(10):1381-6.
5. Pickhardt PJ, Bhalla S. Intestinal malrotation in adolescents and adults: spectrum of clinical and imaging features. Am J Radiol. 2002; 179:1429-35.
6. Ladd WE. Surgical diseases of the alimentary tract in infants. N Engl J Med. 1936; 215:705-8.